

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

Claims 1 - 37 (canceled)

38. (currently amended) A thin film head having a reading part and a recording part comprising:

an upper magnetic pole having a first width at an air bearing surface and a second width which is larger than the first width at a first depth position from the air bearing surface;

a lower magnetic pole having a lower magnetic main layer, a lower magnetic pole front end portion on the lower magnetic main layer, and a projection step portion on the lower magnetic pole front end portion; and

a non-magnetic insulating layer on the lower magnetic main layer, which is formed at an opposite side to ~~an~~ the air bearing surface ~~of the projection step portion;~~

wherein the projection step portion includes one portion which faces the upper magnetic pole, and another portion which is ~~wider than the one portion at a predetermined depth~~ formed so as to extend from a second depth position from the air bearing surface to a third depth position from the air bearing surface and having a part which does not face the upper magnetic pole, ~~the another portion having a width which is wider than a width of the one portion of the projection step portion at the air bearing surface; and~~

wherein a distance from the air bearing surface to ~~a starting position line of~~
~~the another portion of the projection step portion~~ the second depth position is shorter
than a distance from the air bearing surface to the ~~air bearing surface side edge of~~
~~the upper magnetic pole which faces the one portion of the projection step portion~~
first depth position.

39. (currently amended) A thin film head according to claim 38, wherein the
another portion of the projection step portion is formed at both ~~side~~ sides of a track
center line of the projection step portion.

40. (previously presented) A thin film head according to claim 38, wherein the width
of the projection step portion in the track width direction at the air bearing surface is
substantially equal to a width in the track width direction of the upper magnetic pole
at the air bearing surface.

41. (currently amended) A thin film head according to claim 38, wherein a distance
from a track center line of the projection step portion to an edge of the another
portion ~~of the step projection portion~~ in track width direction at the second ~~the~~
~~predetermined depth~~ position from the air bearing surface is greater than a distance
from a track center line of the upper magnetic pole to an edge of the upper magnetic
pole in the track width direction at ~~the predetermined~~ the second depth position from
the air bearing surface.

Claim 42 (canceled)

43. (previously presented) A thin film head according to claim 38, wherein the another portion of the projection step portion has rectangular contours.

44. (currently amended) A thin film head having a reading part and a recording part comprising:

an upper magnetic pole having a first width at the air bearing surface and a second width which is larger than the first width at a first depth position from the air bearing surface;

a lower magnetic pole having a lower magnetic main layer, a lower magnetic pole front end portion on the lower magnetic main layer, and a projection step portion on the lower magnetic pole front end portion; and

a non-magnetic insulating layer on the lower magnetic main layer, which is formed at an opposite side to ~~an~~ the air bearing surface ~~of the projection step portion;~~

wherein the projection step portion includes one portion which faces the upper magnetic pole, and another portion which is formed from a second depth position to a third depth position wider than the one portion at a predetermined depth from the air bearing surface and having a part which does not face the upper magnetic pole, ~~the another portion having a width which is wider than a width of the one portion of the projection step portion at the air bearing surface; and~~

wherein a distance from the air bearing surface to the second depth position ~~a starting position line of the another portion of the projection step portion~~ is shorter than a distance from the air bearing surface to the first depth position, ~~a position of an air bearing surface side edge of the upper magnetic pole where a distance from a track center line~~ wherein widths of the upper magnetic pole in the track width

~~direction to the air bearing surface side edge position of the upper magnetic pole is~~
~~are equal to a distance from the track center line of the projection step portion to a~~
~~position on the starting position line from the air bearing surface to the second depth~~
~~position.~~

45. (currently amended) A thin film head according to claim 44, wherein the projection step portion is formed at both ~~side~~-sides of a track center line of the projection step portion.

46. (previously presented) A thin film head according to claim 44, wherein the width of the projection step portion in the track width direction at an air bearing surface is substantially equal to a width in the track width direction of the upper magnetic pole at the air bearing surface.

47. (currently amended) A thin film head according to claim 44, wherein a distance from a track center line of the projection step portion to an edge of the ~~wider-step~~ ~~projection-another~~ portion in track width direction at the ~~predetermined~~-second depth position from the air bearing surface is greater than a distance from a track center line of the upper magnetic pole to an edge of the upper magnetic pole in the track width direction at the ~~predetermined~~-second depth position from the air bearing surface.

Claim 48 (canceled)

49. (previously presented) A thin film head according to claim 44, wherein the another portion of the projection step portion has rectangular contours.

50. (currently amended) A thin film head having a reading part and a recording part comprising:

an upper magnetic pole having a first width at an air bearing surface and a second width which is larger than the first width at a first depth position from the air bearing surface;

a lower magnetic pole having a lower magnetic main layer, a lower magnetic pole front end portion on the lower magnetic main layer, and a projection step portion on the lower magnetic pole front end portion; and,

a non-magnetic insulating layer on the lower magnetic main layer, which is formed at an opposite side of ~~an~~ the air bearing surface ~~of the projection step portion;~~ and

a gap layer disposed between the upper magnetic pole and the projection step portion;

wherein a projection step portion includes one portion which faces the upper magnetic pole, and another portion ~~which is wider than the one portion~~ formed at a predetermined second depth position from the air bearing surface and which extends to a third depth position from the air bearing surface, the another portion having a part which does not face the upper magnetic pole, the another portion having a width which is wider than a width of the one portion of the projection step portion at the air bearing surface; and

wherein a distance from the air bearing surface to ~~a starting~~ the second depth position of the another portion of the projection step portion is shorter than a distance

from the air bearing surface to a ~~the first depth~~ position of an air bearing surface side edge of the upper magnetic pole which faces the gap layer.

51. (currently amended) A thin film head according to claim 50, wherein the projection step portion is formed at both ~~side~~ sides of a track center line of the projection step portion.

52. (previously presented) A thin film head according to claim 50, wherein the width of the projection step portion in the track width direction at an air bearing surface is substantially equal to a width in the track width direction of the upper magnetic pole at the air bearing surface.

53. (currently amended) A thin film head according to claim 50, wherein a distance from a track center line of the projection step portion to an edge of the wider ~~projection step~~ another portion in track width direction at the ~~predetermined~~ second depth position from the air bearing surface is greater than a distance from a track center line of the upper magnetic pole to an edge of the upper magnetic pole in the track width direction at the ~~predetermined~~ second depth position from the air bearing surface.

Claim 54 (canceled)

55. (previously presented) A thin film head according to claim 50, wherein the another portion of the projection step portion has rectangular contours.